

REMARKS

Entry of this Preliminary Amendment prior to the examination of this application is respectfully requested. Applicants have cancelled claims 5-62 and reserve the right to pursue the subject matter of these claims in a continuing application.

Applicants have also submitted new claims 63-88, and the filing fee is based upon the number of claims after entry of this Preliminary Amendment.

Drawing corrections are proposed with respect to reference numbers on the drawings and to render the drawings in full compliance with 37 C.F.R. §1.83.

Applicants respectfully request consideration of this application and Preliminary Amendment, and passage of this application to allowance.

Respectfully submitted,

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Version with Markings to Show Changes Made

In the Specification

A paragraph has been added on page 1, after the title.

The paragraph beginning on page 17, line 19, has been amended as follows:

The gripping head 152 includes at least one implant engaging structure. Preferably gripping head includes [projections] taper ends 166 and 168 that engage in corresponding recesses in the implant. The projections are provided to control lateral and vertical motion as the implant is impacted into the intervertebral space. Optimally, gripping head also includes a surface that can be used to impact or drive the implant in the preformed cavity.

The paragraph beginning on page 27, line 15, has been amended as follows:

Additional cutting instruments are provided for use with the present invention. For example, shaver 280 illustrated in [FIG.] FIGS. 26 and 26a is provided with a cutting head 286, shaft 284, and handle 282. Handle 282 includes a receptacle 283 or attachment of a slap hammer. Cutting head 286 includes upper shaving blade 288 and lower shaving blade 290 provided between first arm 287 and second arm 289. Upper and lower shaving blade 288 and 290 are orthogonal to first and second arms 287 and 289 such that when the upper or lower shaving blade 288 or 290 or both are raked across tissue surfaces, the blades cut or scrape away a portion of tissue surface. Cutting head 286 also includes a series of index markings 294 to determine the depth of the scraper head in tissue.

The paragraph beginning on page 27, line 25, through page 28, line 10, has been amended as follows:

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--Round scraper illustrated in FIGS. 32-32f is provided for use with the present invention. Round scraper 390 includes shaft 402 and scraper head 392. Shaft 402 defines a longitudinal axis 391. Scraper head 392 includes a first arm 393 and a second arm 395. Shaft 402 includes a tapered neck 403. First arm 393 and second arm 395 define a cavity 398 for receipt of cutting debris. Attached to first and second arm 393 and 395 are rounded scraper edges 394 and 396. First arm 393 and second [are] arm 395 are attached to curved tip 404. Rounded scraper edges 394 and 396 are backward-facing cutting edges, which can cut bone or other tissue as the round scraper 390 is withdrawn from the disc space. Round scraper edges 394 and 396 are provided to allow simultaneous cutting on opposing surfaces of adjacent vertebral bodies. First arm 393 includes an upper surface 397 and a lower surface 400. Upper surface 397 and lower surface 400 are substantially flat. Second arm 395 includes similar structures. Upper surface 397 and/or lower surface 400 allow for controlled scaping of the disc space by contacting either the upper or lower vertebral body. Furthermore, the flat upper and lower surfaces 397 and 400 and tapered neck 403 are adapted to provide enhanced viewing of the disc space. It is important to be able to view the disc space while positioning the round scraper 390 in the disc space to remove bony tissue. Round scraper 390 is provided for preparing a bottom of the preformed cavity for proper seating of implants as depicted in the present invention.

The paragraph beginning on page 27, line 18, has been amended as follows:

As shown in FIG. 34, there is also provided in accordance with the present invention rotatable cutter 430. Cutter 430 includes handle 432, shaft 434, and cutter head 436. Cutter head 436 includes first cutting arm 437 and second arm 439. First cutting arm 437 and second cutting arm 439 are spaced apart and define a cavity 448 therebetween for receipt of cutting debris. First cutting arm 437 includes at least two cutting blades. For example, FIG. 34a depicts cutting arm 437 having a first cutting blade 438 and opposite second cutting blade 440. First and second cutting blades extend longitudinally and are positioned to lie parallel to the longitudinal axis of rotatable cutter 430. Similarly, second cutting arm 439 is provided with a first cutting blade 442 and a second cutting blade 443. Rotatable cutter 430 is provided for use in a disc space to cut adjacent endplates

of adjacent vertebrae by a twisting the cutter. As with other instruments, the cutting head includes index marks [440] 441 to indicate the depth the rotatable cutter is inserted into tissue.

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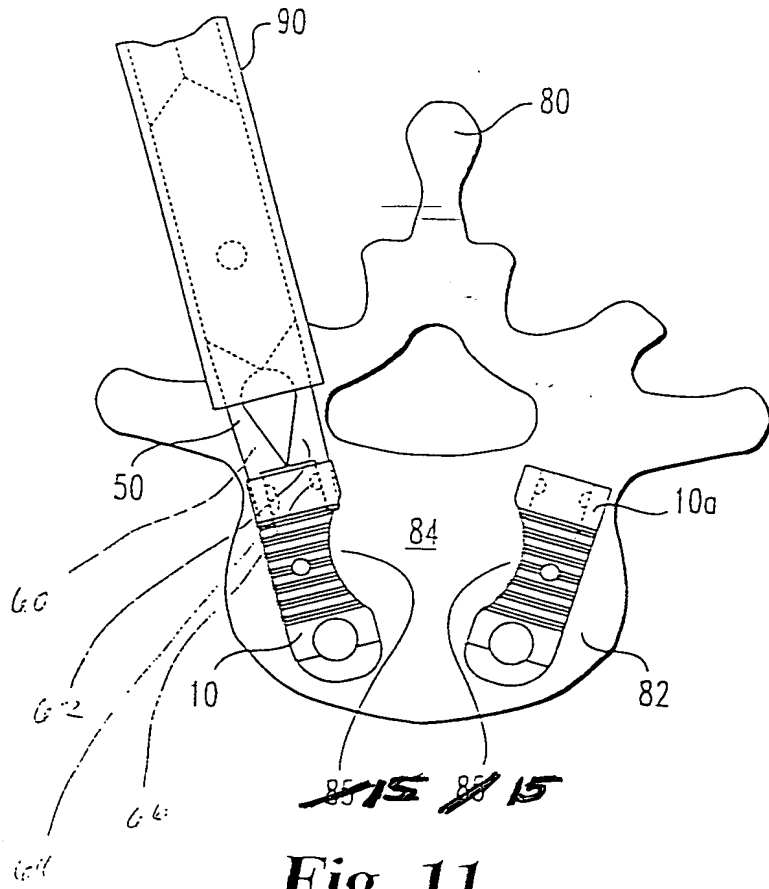


Fig. 11

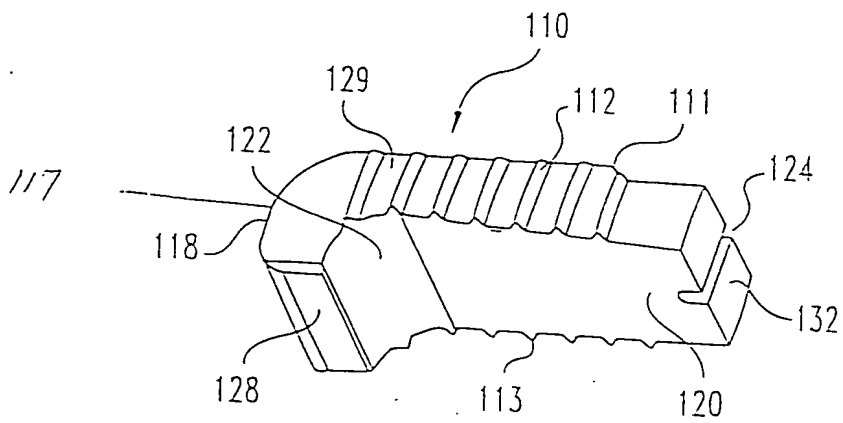


Fig. 12

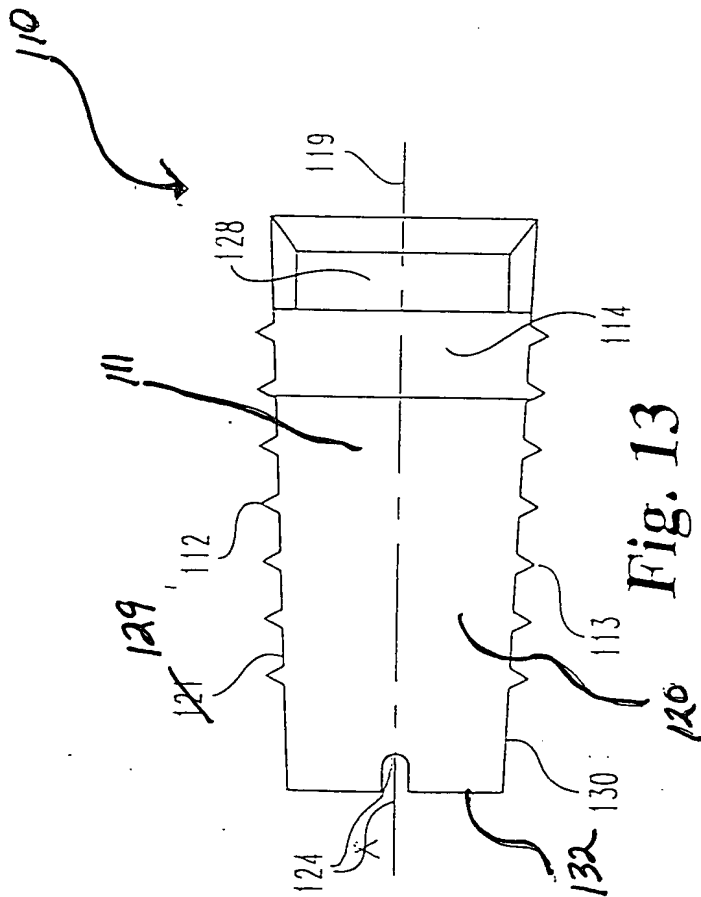


Fig. 13

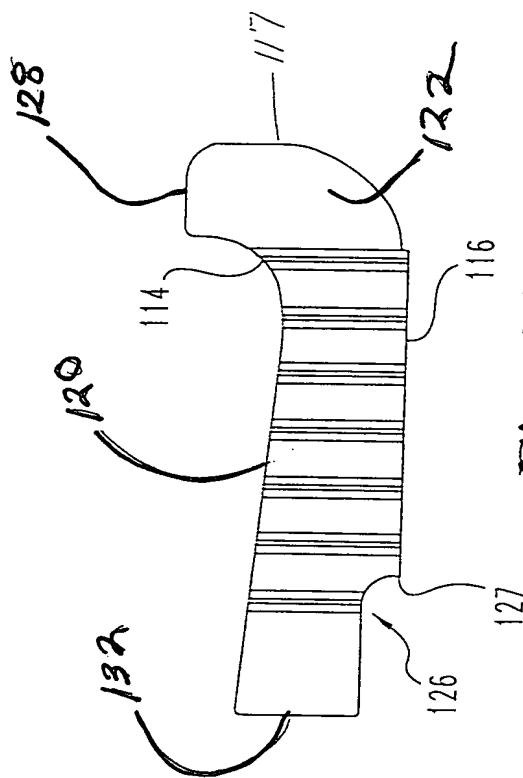


Fig. 14

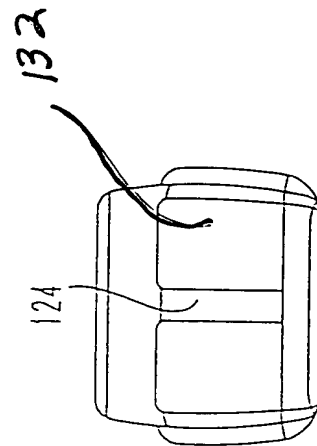


Fig. 15

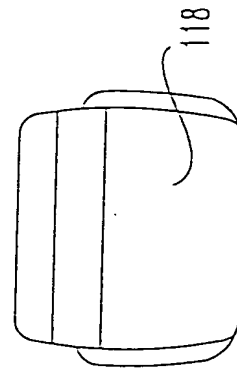


Fig. 16

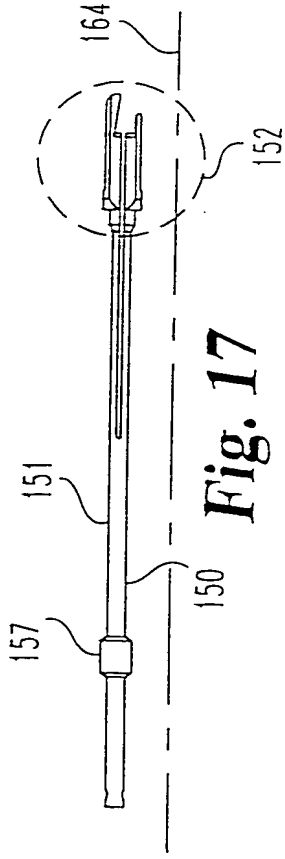


Fig. 17

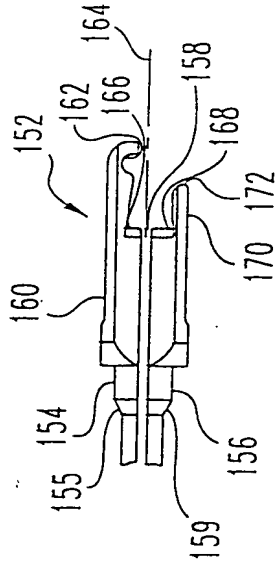


Fig. 17a

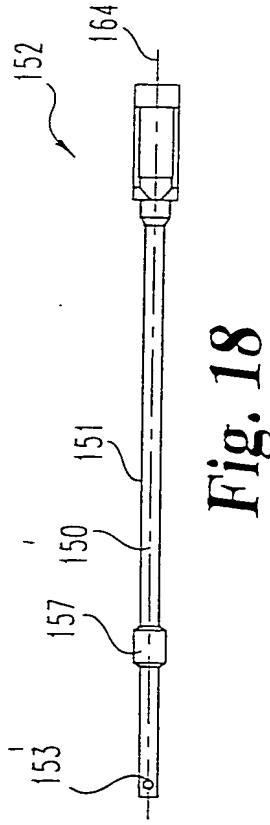


Fig. 18

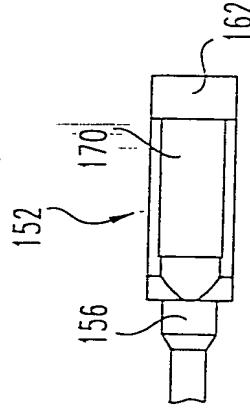


Fig. 18a

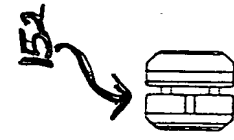


Fig. 18b

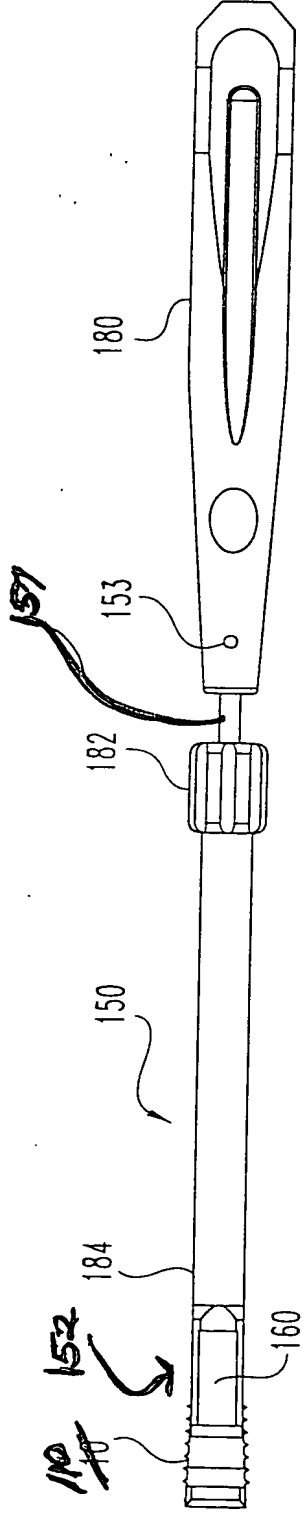


Fig. 19

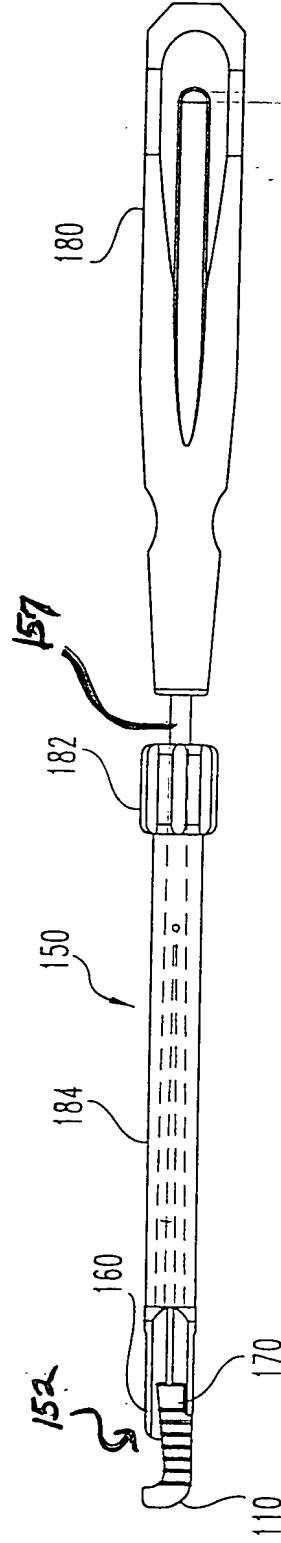


Fig. 20a

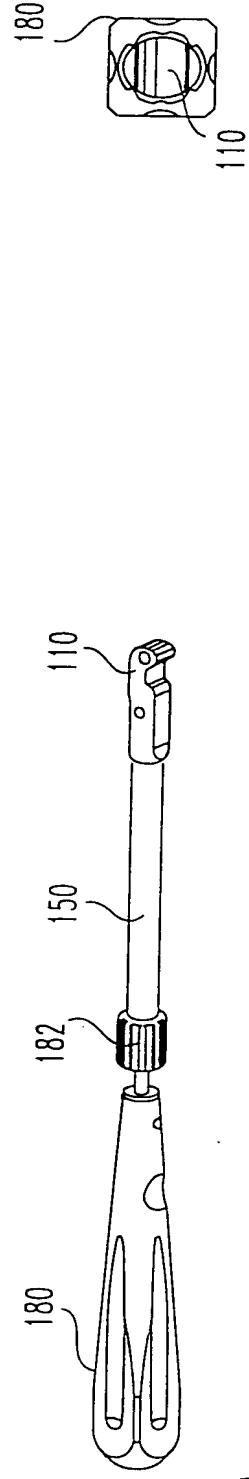
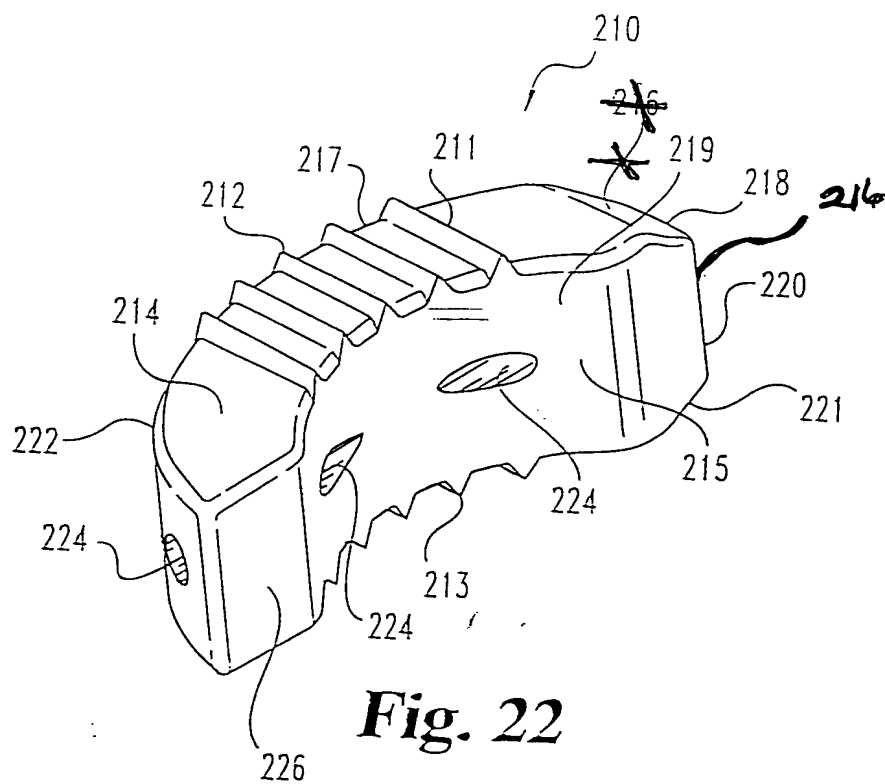


Fig. 21

Fig. 20b



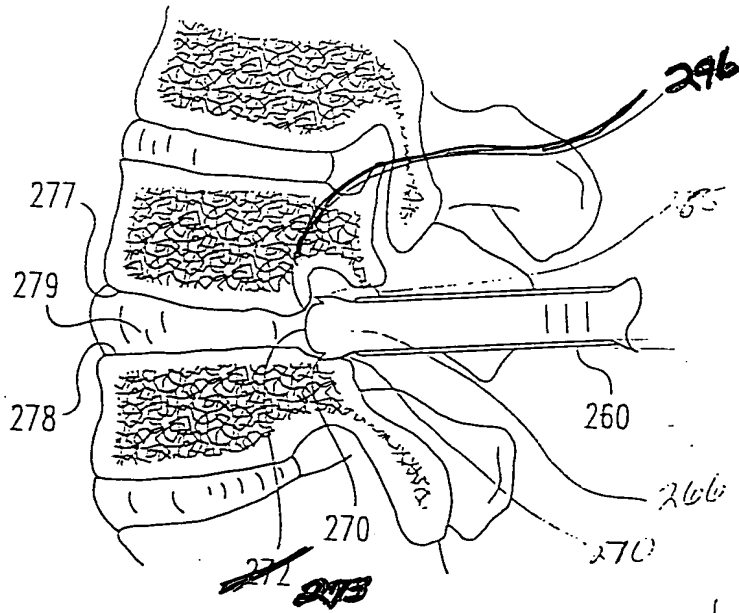


Fig. 25b

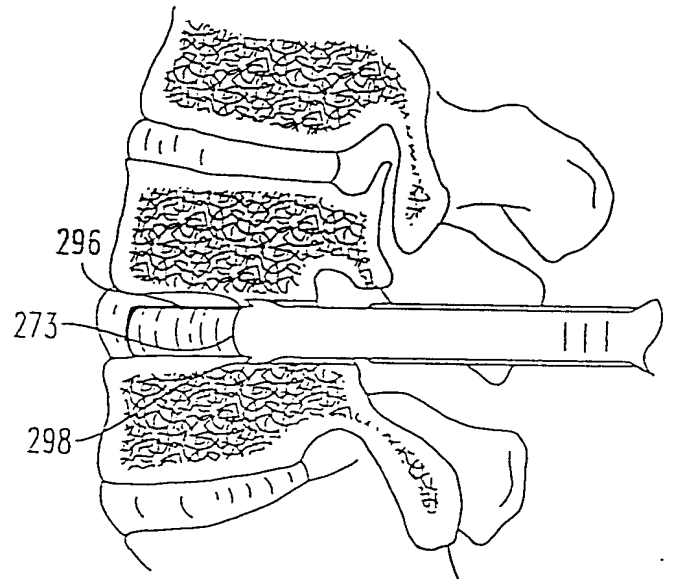


Fig. 25c

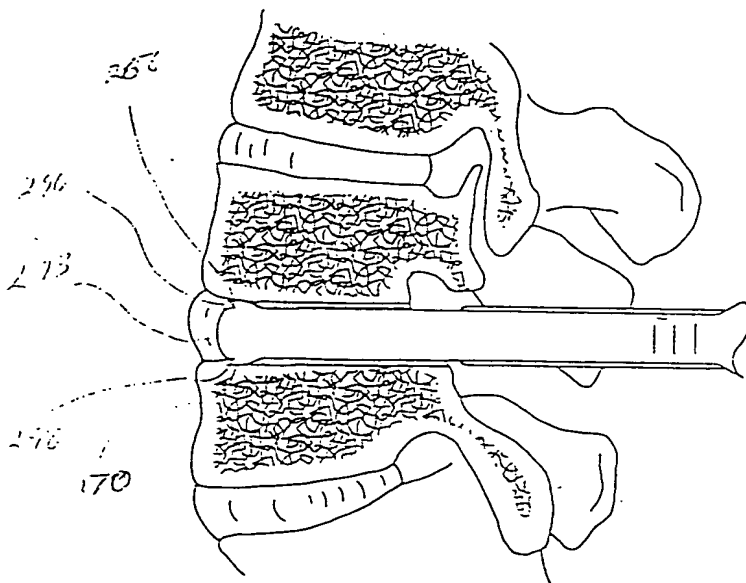


Fig. 25d

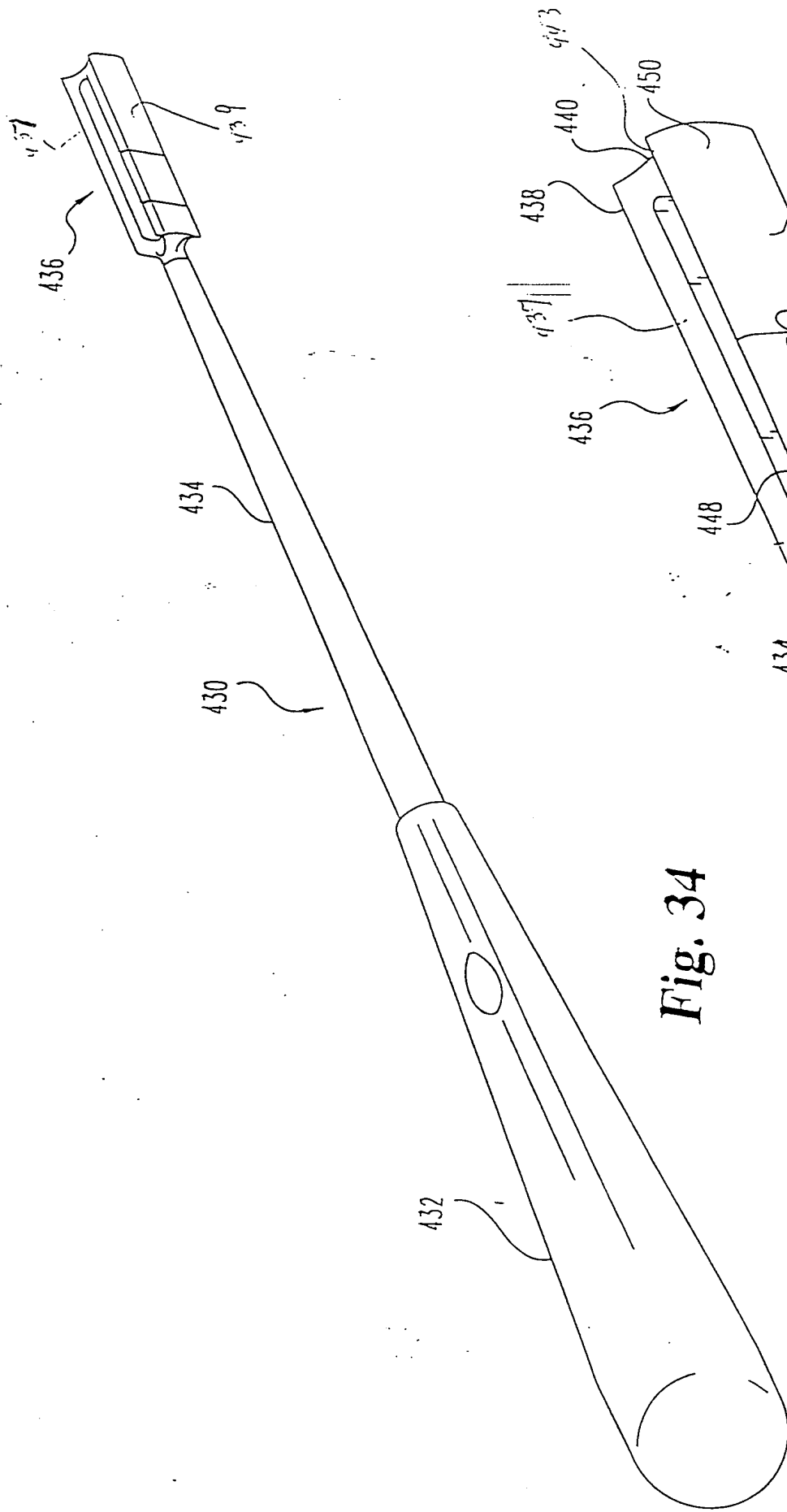


Fig. 34

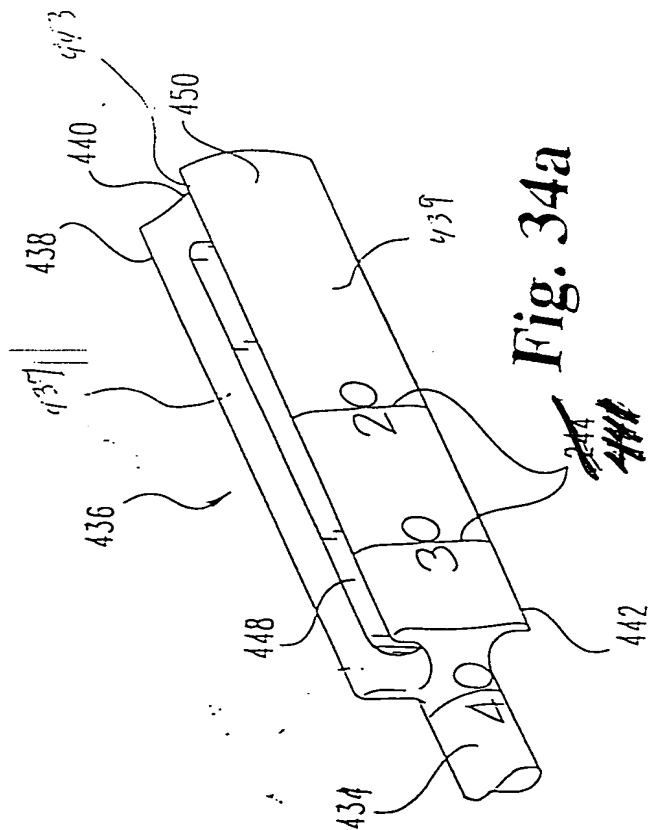


Fig. 34a

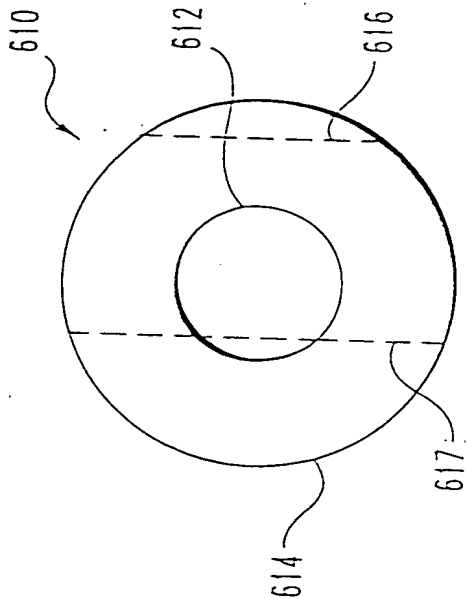


Fig. 44a

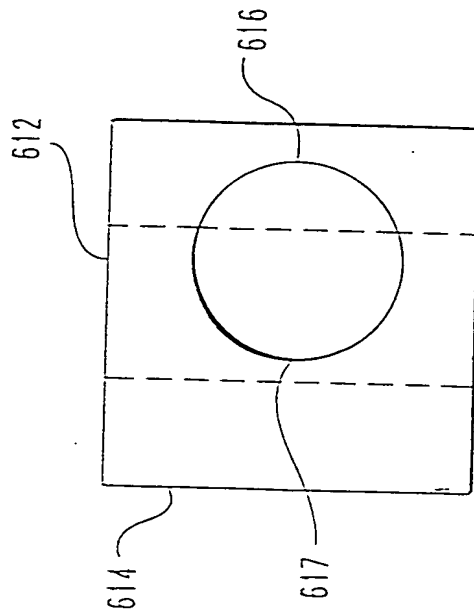
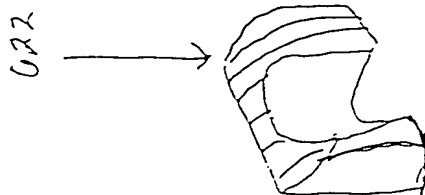


Fig. 44b



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~~Fig. 44c~~
44c

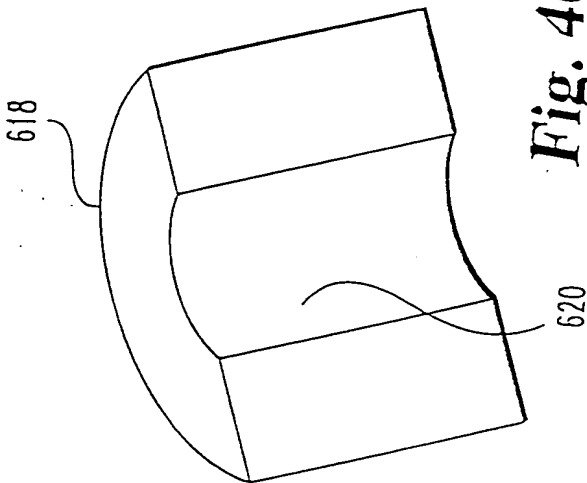


Fig. 46

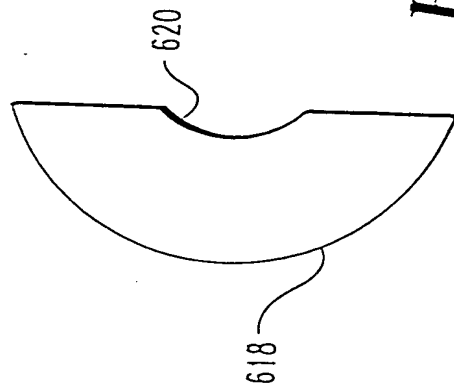


Fig. 45